THE UNITED STATES DISTRICT COURT FOR THE

NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his capacity as ATTORNEY GENERAL OF THE STATE OF OKLAHOMA and OKLAHOMA SECRETARY OF THE ENVIRONMENT C. MILES TOLBERT, in his capacity as the TRUSTEE FOR NATURAL RESOURCES FOR THE STATE OF OKLAHOMA, Plaintiff,	
vs.	4:05-CV-00329-TCK-SAJ
TYSON FOODS, INC., et al, Defendants.	

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MOTION FOR

PRELIMINARY INJUNCTION HEARING

BEFORE THE HONORABLE GREGORY FRIZZELL

VOLUME VII

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PLAINTIFF'S EXHIBIT G

A I do recall reading that, yes.
Q Now, as we're talking about microbial source tracking, is there a distinction to be made between the tools and the methodology?
A Well, you can make that distinction, yes. 02:59PM
Q Please tell us what, if any, distinction you would make.
A Well, the tools, I mean, I guess I think of the tools as your common laboratory procedures, your PCR, your cloning, your DNA sequencing, those kind 02:59PM of things we do in the lab every day. Those will put you to sleep. It's pretty boring stuff. It's how you use these tools that really --
Q It's the application of the tools?
A Exactly. It's the application, and in these, 03:00PM especially the molecular cases, what you're looking at, what piece of fragment, what bacteria. You know, this is really not even an identified bacteria. It's 98 percent genetically close to Brevibacteria avium. It's never been cultured. 03:00PM When you find a bacteria, that's the first step you do.
Q Did Dr. Harwood culture it?
A I don't believe she did. Brevibacterium, actually to differentiate, there's Brevibacteria 03:00PM

Q Usually particle size, the smaller the particle size, the easier for the transport in the environment; isn't that a general truth, sir?
A It depends on the conditions of the field. It's a vegetation. 04:31PM
Q Okay. Now, isn't it true that Dr. Harwood did test all of those different locations except for poultry feces, poultry litter, land application, field surface, runoff waters, soils, the surface transport water, the groundwater and the ultimate recreational waters, and they found the poultry specific DNA in all those locations? 04:31PM
A I believe that they did find the Brevibacteria, that small strand, in all those locations. They did test -- you're correct, they tested all those. 04:31PM
Q I want to turn to Exhibit 40.
A Okay.
Q That was where you had the volume of --
MR. PAGE: Again, Your Honor, I know I step on very close -- but this is part of the cross, and we're going to talk a little bit more about cows but just briefly. 04:32PM
THE COURT: I understand.
MR. PAGE: Thank you. 04:32PM

primers that she produced caused replication. In many cases -- that's how you have to optimize and validate them. In many cases you have 19 bases that match on a 20 base primer, and you can get replication. I'm sorry not I'm answering yes or no but it's simply not that straightforward. 04:39PM

Q Would you look at State's 569? I'll represent to you, sir, that it's just a portion, actually attachments to your report.

A Yes, sir. 04:40PM

Q This is your work product; correct?

A I believe it is.

Q And under litter samples it says, Brevibacterium nanograms per gram on the first entry there; correct? 04:40PM

A Yes, it does.

Q What is that; what do you intend that column to represent?

A Well, that was the values that were reported in terms of the amount of Brevibacterium DNA that they, Dr. Harwood and North Wind, included in their data. 04:40PM

Q If that is not the amount of Brevibacterium that was reported, then your analysis and correlation would be mistaken; is that correct? 04:40PM

A It may be off a little. I don't know that it would affect the conclusions.
Q Let's take a look at it. Would you please look at the North Wind report dated October 4, State's Exhibit 533? 04:41PM
A Okay.
Q And -- well, first is of all, look at Page 4.
A Yep, I'm there.
Q I just want to correct the record. When you were looking at the flow chart for Dr. Harwood, you 04:41PM testified that she was mistaken on this chart, that the detection limit was more like 2,000 rather than 6 gene copies; correct?
A I repeated what she said under oath, I thought that it was 2,000 either in her deposition or here. 04:41PM
Q Have you seen this North Wind report that's part of the evaluation for the PCR, the October 4th report?
A It was amended in December, sir.
Q There was additional reports issued in 04:41PM December, but this is one of the earliest reports that hasn't been amended. Did you not understand that --
MR. JORGENSEN: I object. Counsel's statement about which reports there are or what 04:42PM

dates they came, there's been no foundation for that.

THE COURT: Were you contesting, Mr. Jorgensen, that this report was not amended?

MR. JORGENSEN: I honestly don't know what days they came and which ones were amended. I don't think he does either, and counsel can't provide that testimony. Sorry, Your Honor. 04:42PM

THE COURT: In efforts to speed this up, Mr. Page is making representation to this witness. If you find to the contrary, you can bring it up. The objection is overruled. Mr. Page? 04:42PM

Q You see there on Page 4 where it says detection of poultry specific brevi biomarker, it says the detection limit is actually 6 copies per microliter? 04:42PM

A And I believe Dr. Harwood indicated that that detection was actually for the regular PCR, but for the quantitative PCR, because of the dilution steps, that she testified that it was 2,000 for the quantitative PCR. 04:43PM

Q Okay. So it's 2,000 quantitative and 6 for detect or non-detect?

A Correct.

Q Present or not? 04:43PM

A Exactly.
Q Now, I want you to look on that same exhibit to the page -- two more pages beyond where it has a list of the results.
A Yep. 04:43PM
Q Now, under Exhibit 569, you've listed values of 21, 21.3. Do you see those numbers there from 569?
A I do.
Q Now, under what column on Exhibit 533 are 04:43PM those levels of DNA located?
A Those are under the DNA.
Q So that's total DNA, is it not, sir?
A That would be.
Q So you made a mistake when you did your 04:44PM correlation analysis?
A I'd have to double check. I don't know if this -- what was shown earlier was based on the same data.
Q Well, I mean, we could look at it. Look at 04:44PM your Defendant's Exhibit D 42.
A It might have been, sir.
Q Don't you see the same plots there for total DNA rather than individual strands of Brevibacteria?
A Yes, sir, I do. 04:44PM

Q Okay. So if you use the proper correlation analysis, is it possible that this might actually show a correlation between the litter and an indicator bacteria?

A I actually did use these numbers on the right as well. Where I got the DNA in the first column -- or I'm sorry -- the second column here where it says nanograms per liter, the DNA was the database that was provided to me by the State on an Excel spreadsheet that had these numbers here listed as the qPCR. 04:44PM 04:45PM

Q You also had the October 4th report, did you not?

A The October 4th, I probably did.

Q And that is very clear that the numbers you used were total DNA rather than biomarker copies per microliter; correct? 04:45PM

A In this but again --

Q Can you answer that yes or no, please?

A I didn't base -- I didn't get that from this report. So when I did my analysis, I'm sorry, I didn't base it on this document. 04:45PM

Q You didn't go to the original source?

A Well, I was looking at more recent documents. We had the North Wind report in November, December. 04:45PM

Some of the DNA were negative values on some of the reports I'd seen. So it was very dynamic, not only in the column headings, but in the numbers.

Q In your Exhibit 42, when you say biomarker, nanograms per gram under the horizontal line, the base line there, that's really a mistake; that's not the biomarker; that's total DNA; correct? 04:46PM

A It potentially may be, sir.

Q Would you please turn to State's Exhibit 534, please? 04:46PM

A Okay.

Q I'll represent to you that this is a correlation plot using the actual gene copies from the October 7th and comparing it to Enterococcus. Do you see a correlation on State's Exhibit 534? 04:46PM

A There would be -- it looks like with respect to Enterococcus it is a correlation.

Q Thank you, sir. Now, isn't it true that for Enterococcus, that particular indicator bacteria has been referenced by the State as causing a 04:47PM significant amount of exceedances in the state water quality?

A I think about 5,800 miles in the IRW -- or I'm sorry -- in the state are impaired, listed as impaired by Enterococci. 04:47PM